

**NATIONAL IMMUNIZATION PROGRAMME**

18

# **MANUAL FOR HEALTH WORKERS**



COMH  
321  
01934

**Ministry of Health and Family Welfare  
Government of India  
New Delhi  
1990**



01934

18



# **NATIONAL IMMUNIZATION PROGRAMME**

COMMUNITY HEALTH CELL

## **Manual For Health Workers**

**MINISTRY OF HEALTH AND FAMILY WELFARE**

**GOVERNMENT OF INDIA**

**NEW DELHI**

**1990**



Published by:

## **Ministry of Health and Family Welfare**

Government of India,  
Nirman Bhavan, New Delhi.

01934

COMH 321

COMMUNITY HEALTH CELL  
326, V Main, I Block  
Koramangala  
Bangalore-560034  
India

First published: 1985

Revised: 1986

Revised: 1987

Revised: 1988

Revised: 1989

Revised: 1990

This publication is available in English, Hindi, Bengali, Assamese, Urdu, Oriya, Kannada, Gurumukhi, Tamil, Malayalam, Telegu.



## CONTENTS

### Introduction

1. Vaccines and when to give them .....	1
2. The Cold Chain .....	5
3. Syringes, Needles and Sterilization .....	15
4. How to give vaccines .....	26
5. Strategy of Vaccine Delivery .....	35
6. Community Support and Demand Generation .....	38
7. Disease Surveillance .....	43
8. Monitoring of Immunization Programme .....	46

### ANNEXURES

9. List of Communication Sites .....	48
10. National Immunization Programme Monthly Performance Report ..	49
11. Mother-Infant Immunization Card .....	52
12. Record of Pregnant Women .....	54
13. Infants Immunization Record .....	55





# **The Universal Immunization Programme**

## **1.1 The Six Vaccine Preventable Diseases**

There are Six infectious diseases that are serious and common in India. These diseases can kill or cripple many children even though other children survive and become immune. These six diseases are :

- . tetanus
- . poliomyelitis
- . diphtheria
- . pertussis (whooping cough)
- . measles,
- . childhood tuberculosis (TB)

The unique thing about these diseases is that we can prevent them by immunization. We give a child a vaccine ; that is, a weakened or killed form of the micro-organism which causes the disease. The vaccine makes the child's body produce antibodies, but it does not give him the disease. So, he becomes immune without becoming ill.

You may have seen cases yourself. The main characteristics of these diseases are given in Chapter 7, on page 43. Should you see any cases in future that resemble these, report them immediately to your supervisor or the medical officer of the PHC. They will then be able to help you to control more cases.

## **1.2 National Immunization Schedule**

While the vaccines are very effective in protecting the children from serious diseases, they must however be given at the right age and the full course must be completed. They must also be kept carefully because they get damaged if they are not kept cold.

The schedule which tells the age at which the vaccines are best given and the number of doses of each vaccine, is called the Immunization Schedule.

In our country we give :

2 doses of TT to pregnant women ; and

3 doses of DPT

3 doses of OPV

1 dose of BCG

1 dose of measles

to children under one year of age.



## Immunization of Pregnant Women

The pregnant woman develops enough antibodies to protect herself and her child after birth from neonatal tetanus only 2 to 3 weeks after the second dose has been given. Remember, one dose is not sufficient. So if you have not given two injections, your work will be wasted as the child is not safe from tetanus. You can give the first injection as soon as the pregnant woman registers with you. Then you will have enough time to give the second injection because the interval between the injections should not be less than one month.

Only if the pregnant woman has received TT vaccine previously, one dose during this pregnancy will be sufficient. This is called the booster dose. It should be given as early as possible in the current pregnancy.

## Immunization of Infants

The children are given 3 doses of DPT and Oral Polio Vaccine (OPV). Both these vaccines are given at the same time. These vaccines will protect the child from diphtheria, whooping cough, tetanus and poliomyelitis. Since the children can get the diseases at anytime if they are not immunized, we must try to complete the 3 doses as early as possible and definitely before the child's first birthday. You can start the first dose as soon as the child is 6 weeks of age. But remember, that the interval between the doses must not be less than one month. If for the subsequent dose, the child is brought late, there is no need to restart the schedule. One dose of BCG vaccine must also be given to the child to protect him from tuberculosis. You can give the vaccine at birth or when you are giving DPT and OPV vaccines.

Measles vaccine is not given before 9 months of age because the antibodies received from the mother still protect the child and will not let the vaccine work. Give one dose as soon as the child completes 9 months of age (270 days).

### NATIONAL IMMUNIZATION SCHEDULE

To whom	When	Vaccine	No.	Route
Women Infants	Pregnancy • 6 wks – 9 months	TT	2*	Intra-muscular
		DPT	3	Intra-muscular
		Polio	3	Oral
		BCG	1**	Intra-dermal
	9 to 12 months	Measles	1	Sub-cutaneous
Children	16 to 24 months	DPT	1***	Intra-muscular
		OPV	1***	Oral
	5 years	DT	2*	Intra-muscular
	10 years	TT	2*	Intra-muscular
	16 years	TT	2*	Intra-muscular

\* give one dose if vaccinated previously.

\*\* if the child is born in the hospital, BCG vaccination may be administered after birth.

\*\*\* booster dose.

•As early as possible.



## NOTE

- Interval between doses should not be less than one month
- The dose of all vaccines is 0.5 ml except BCG which is 0.1 ml. Polio vaccine is given by mouth (2 drops). Check the label of the vial before use.

Older children may be given primary vaccination "On Demand". DPT vaccine should not be given to children who have completed 2 years since pertussis component may lead to complications, they are given two doses of DT only. After 6 years of age they should be given TT only as DT is not required.

When the child is 16–24 months of age we give an additional dose of DPT and OPV (Booster dose).

Be sure to explain all this to the mother so that she will know when to bring the child to you again for the next dose. But if the child could not come in time, give the next dose as soon as this is possible without starting all over again.

Sometimes the children are not given vaccines because they may have some mild illness at the time of the visit. Remember, *malnutrition, low-grade fever, mild respiratory diseases, diarrhoea and other minor illnesses are not a contraindication to vaccination.* However, take the history of convulsions and if you have any doubts, consult your supervisor or the medical officer. Do not deny the vaccines unless absolutely necessary, because by the time you come again the child may have become lame due to polio or died due to tetanus or have had any of the other diseases. Children become very weak after whooping cough and measles, especially the already malnourished ones and easily get other infection such as broncho-pneumonia and diarrhoea.

### R E M E M B E R

*Vaccines are effective only if full course of a potent vaccine is given at the right age.*

## Reactions after vaccination

Reactions after vaccination are in general mild and of a short duration. These may be :

- \* Mild fever
- \* Local pain and swelling at the site of injection
- \* Mild rash one week after measles vaccination.



A lump or papule appears in the third or fourth week after BCG vaccination. It is generally not painful but is tender to touch. The papule increases in size to 6 to 10 mm in diameter by the sixth week. The nodule softens with the formation of pus. No treatment is necessary. At the end of 10 to 12 weeks only a small scar is visible.

In rare cases convulsions or collapse after DPT vaccination have been observed. In such cases further doses of DPT should be stopped and medical officer consulted. If the child has received only one dose of DPT, a second dose of DT may be given.

Inform the parents of the expected side-effects so that they do not worry. If there is any anxiety you should encourage them to return to the health centre for consultation.

### **Complications**

- Abscess formation is usually due to the use of unsterilized or inadequately sterilized syringes and needles.
- The injections are painful if blunt needles are used.
- Contaminated vaccines can lead to severe reactions.
- Use only sterile syringes and needles to mix vaccines and to draw them from the vials.
- Do not use opened vials in the subsequent sessions. There is rise of severe reactions including death from use of left over vaccines. Display these instructions at all sites where immunization sessions are conducted.

### **R E M E M B E R**

INFORM THE PARENTS OF THE

- ★ *Next Day of Visit*
- ★ *Expected Reactions*
- ★ *When to Seek help from a Doctor*



## 2. THE COLD CHAIN

### 2.1 Looking after Vaccines – The Cold Chain

The *equipment* and the *people* that keep vaccines cold from the manufacturer to the expectant mother and the child are together called *The Cold Chain*. Vaccines must stay cold all the way from the manufacturer to the child. All the vaccines must be kept at +2° Celcius to + 8° Celcius (°C). during storage and transportation.

### 2.2 What Damages Vaccines?

You can easily damage vaccines if you do not look after them carefully. A vaccine is *potent*, if it is kept carefully and is able to make a child immune. If it is damaged, and unable to make a child immune, then it has *LOST ITS POTENCY*.

All vaccines lose their potency after a certain time, even with good care. The Expiry Date is printed on the vaccine vial. No vaccine should be used after expiry.

***Heat, sunlight and freezing can all damage vaccines***

Heat and sunlight damage all vaccines.

Freezing damages the following vaccines: DPT, DT, TT and typhoid.

**If a vaccine is damaged by heat or by freezing you cannot make it potent again. It does not help to put it back at the correct temperature after the damage is done.**

Keep all vaccines at +2°C to +8° C and away from the sunlight.

The vaccines must be *collected* quickly from the airport by the state stores and from the state stores by the district stores.

They must be *stored* at +2°C to +8°C in the refrigerator at the State store/ the Regional Store, and the District Store.

They must be kept cold during *transport* from one store to another.

Only then, the vaccines arrive at your Health Centre in good condition.

### 2.3 After vaccines reach the Centre?

You must keep them at +2°C to +8° C in your Health Centre refrigerator.

You must carry them to the immunization session in a vaccine carrier with ice or frozen ice packs.



You must keep the vaccine vials in a cup of ice or on top of an ice pack while you immunize the children. If there is no child waiting to be immunized, put back the vials in the carrier.

## **2.4 Looking after vaccines in a Health Centre refrigerator**

You should keep vaccines at the proper temperatures in your Health Centre refrigerator for one month. You must look after them carefully. Do not keep more than one month's requirement at any given time.

### **2.4.1 Ice-Lined Refrigerators (ILRs)**

ILRs are top opening refrigerators. The ILRs are lined with pipes of ice or ice packs. These act as a buffer in case of power failure and the temperature inside the refrigerator does not rise.

Once cold, the ILRs can keep the vaccines within the safe temperature range with an electricity supply of even 8 hours in a 24 hour cycle.

The bottom of these types of refrigerators is the coldest place. DPT, DT TT and BCG vaccines should not be kept directly on the floor of the refrigerators as they can freeze and get damaged. Keep DPT,DT, TT and BCG vaccines in the baskets provided with the refrigerator.

There is no *freezer* compartment, in the ILRs. You cannot freeze ice packs or ice in the ILRs.

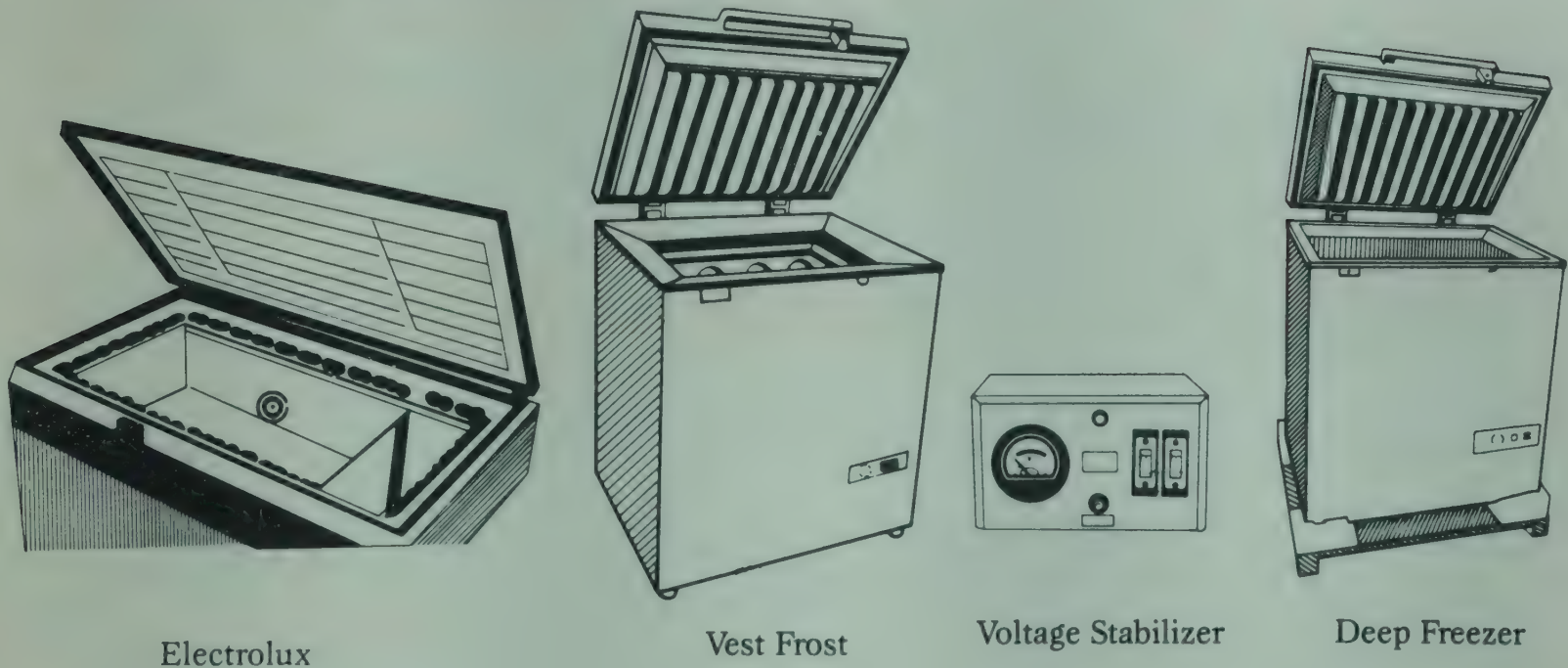
Keep a dial thermometer inside the ILR to record the daily temperature even if there is an inbuilt thermometer.

If you wish to prepare ice packs in the ILRs, you can switch it (Electrolux ILR only) on to work as a freezer. But before you do this be sure that you have transferred DPT, DT, TT and other vaccines that are damaged at sub-zero temperature, to another refrigerator or to an already prepared cold box. The cold box must have the required number of solidly frozen ice packs.

*Before you switch the ILR to a freezer consult your medical officer -in-charge.* The vaccines should not be kept at room temperature. If you do not have alternate storage space you must not use the ILR as a freezer. Ordinarily, ILRs must be used only as a refrigerator for storing vaccines even when there is another refrigerator in your office. The risk of cold chain failure is far less in an ILR than in a conventional refrigerator specially where there are periodic power failures.



## ICE-LINED REFRIGERATORS (ILRs)

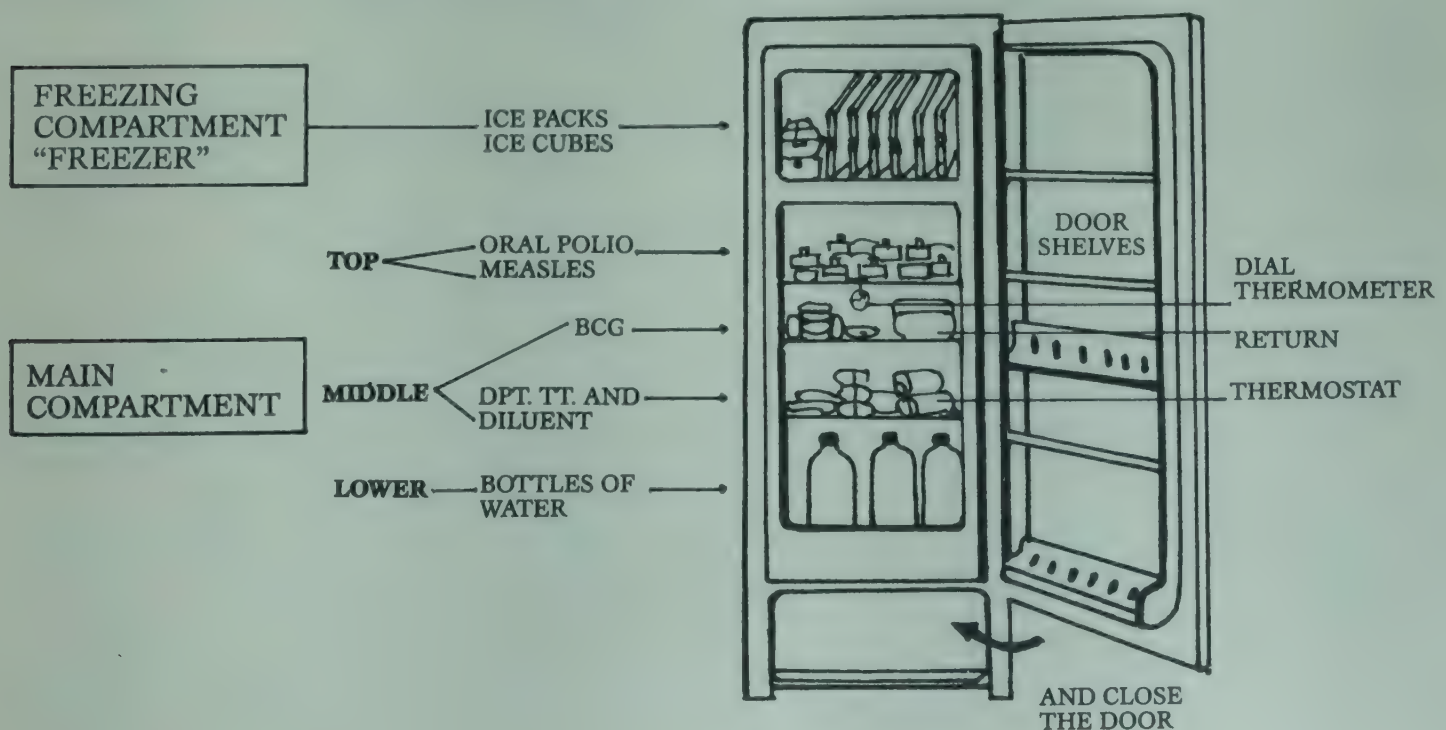


### 2.4.2 Deep Freezer

In the programme a set of Vestfrost ILR and deep freezer is being supplied. Deep freezer is to be used for storing polio and measles vaccine and freezing is to be of icepacks. The Vestfrost ILR is used for storing DPT, DT, TT, and BCG vaccines and diluent. Both the equipments are connected to a common voltage stabilizer.

### 2.4.3 Conventional Refrigerator :

Arrange the vaccines correctly in the Refrigerator.





Continue to look at Fig. 2.4.3 and see how it illustrates all these rules:

- \* Stack the vaccines neatly so that air can move between the boxes.
- \* Keep measles and polio vaccines on the TOP shelf near the freezer. These vaccines can also be kept in the freezer.
- \* Keep DPT, TT, DT and BCG on the MIDDLE shelf, so that they are away from the evaporator.
- \* Keep the diluent (for measles and BCG) in the refrigerator (not in the freezer).
- \* Have a special box to keep 'Returned' unopened vaccine vials that have been taken to an immunization session in a vaccine carrier.
- \* Keep plastic bottles of water or spare ice packs on the lower shelf to help keep the refrigerator maintain low temperature in case of power failure.
- \* Keep the door closed (not shown in Fig. 2.1). When you need to open it, plan what you will do first. Then open the door. Do what you have to and close the door quickly.

#### **R E M E M B E R**

- \* Do not *open the door too frequently.*
- \* Do not *put any food or drink in the vaccine refrigerator.*
- \* Do not *put any vaccine in the door shelves.*
- \* Do not keep more than one month's requirement.
- \* Do not *keep 'Expired' vaccines in the refrigerator.*

### **Check the Temperature of the Refrigerator**

Check the temperature in the main compartment twice everyday; when you start work, and when you leave.

This should be well between +2°C and +8°C.

So you must have :

- \* a dial thermometer in the refrigerator in the middle compartment.
- \* the booklet of 12 forms for recording the temperature on top of the refrigerator.

If the temperature rises above +8°C and falls below + 2°C, inform your supervisor immediately as the vaccines may get damaged.



#### 2.4.4 Defrosting of Refrigerators

The temperature in the refrigerator can rise if there is a thick layer of ice around the freezer. It is therefore necessary to defrost the refrigerator periodically. This should be done if the ice in the freezer is more than 1 cm thick.

Most refrigerators now have automatic defrosting switch. When the button is pressed the cooling in the freezer compartment stops and the ice starts melting. Put back the flap of the tray beneath the freezer compartment to allow the water to escape to the tray under the refrigerator. After the ice has melted, the refrigerator will automatically start again.

Do not forget to put flap of the tray back after defrosting, otherwise the cold air will not flow down and the temperature in the cabinet will rise.

For defrosting the ILR, you would need to switch off the refrigerator and remove the vaccines to a cold box or another refrigerator. The ice packs for the cold box should be prepared before defrosting the ILR so that the

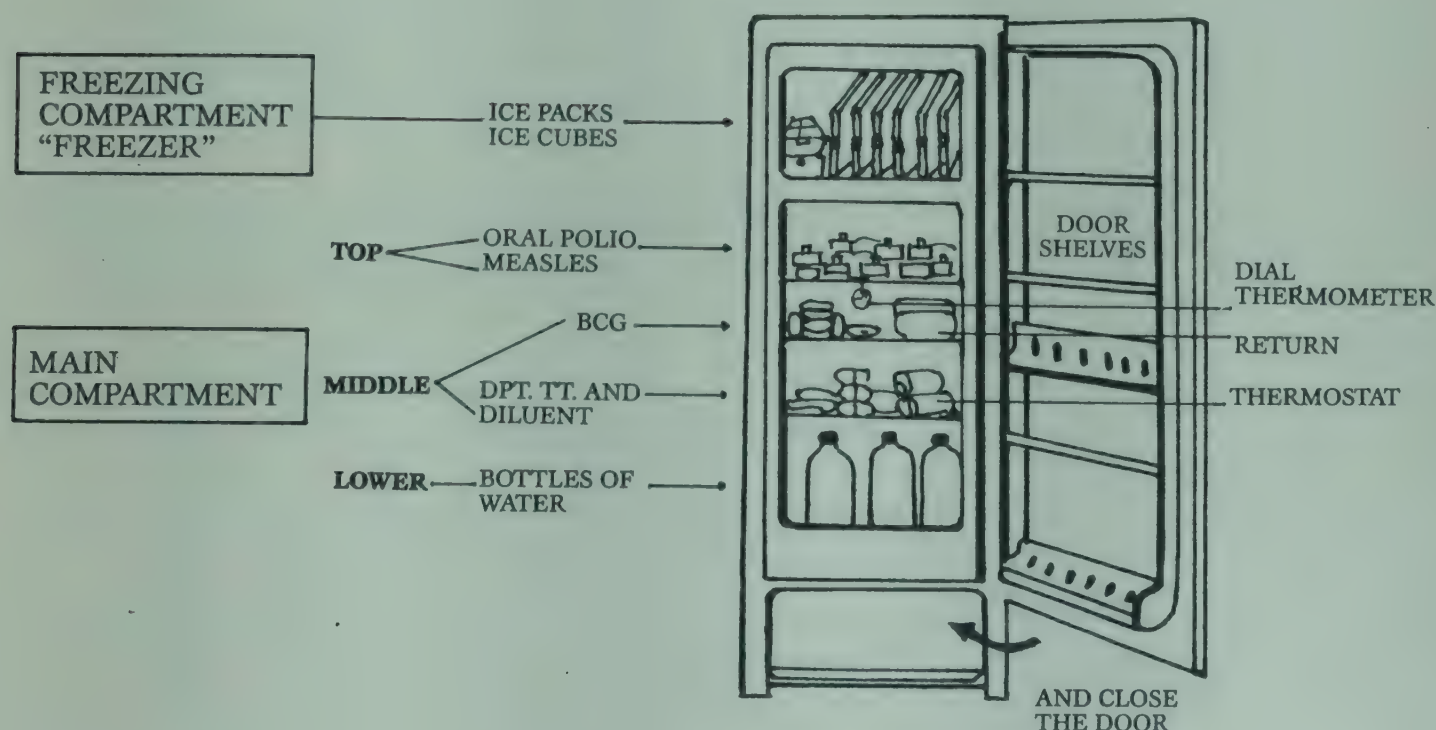


Fig. 2.4.3: A health Centre refrigerator showing vaccines stored correctly.



vaccines are not exposed to temperatures above +8°C. Use a clean cloth for cleaning and drying the inside of the refrigerator.

Do not use any sharp instrument for removing the ice as this can damage the refrigerator.

### **R E M E M B E R**

#### **FOR YOUR HEALTH CENTRE REFRIGERATOR**

- ★ *Arrange the vaccines correctly*
- ★ *Check the temperature twice a day*
- ★ *Defrost if ice collected is more than 1 cm thick*
- ★ *Do not keep vaccines for more than one month*

## **2.5 Cold Chain Equipment to Transport Vaccines**

You must keep vaccines cold all the way from the refrigerator to the child or mother whom you immunize. Vaccine carriers are used for carrying small quantities of vaccines to the sub-centres or villages.

### **Vaccine Carriers**

Vaccine carriers have thick walls and lids. They are made of special material which does not allow heat to pass through it. Vaccine carriers cannot make vaccines cold. Only a refrigerator or ice can make things cold. But the vaccine carriers can keep ice and vaccines cold for a short time, because heat cannot go inside to warm them.

Vaccine carriers are very useful for bringing vaccines from the health centre for one day's use. They will keep the vaccines safe and protect the children you vaccinate.

### **R E M E M B E R**

- ★ *Do not leave vaccine carriers in sunlight*
- ★ *Do not leave the lid open*
- ★ *Do not drop or sit on them*
- ★ *Keep it clean and dry*
- ★ *Use frozen ice packs*



## **Day Carriers**

These are smaller carriers and are used only when a few vials are required for one session. The day carrier can keep vaccines cold for 6-8 hours. The vaccines must, therefore be returned to the PHC on the same day after the session. They can carry 8-10 vials along with the ice cubes.

### **2.6 Ice Packs**

Ice packs are used for lining the walls of the vaccine carriers to keep them cold. They are flat plastic bottles filled with water. The ice packs are prepared by keeping them in the freezer or in the freezer compartment of an ordinary refrigerator.

*To prepare ice packs :*

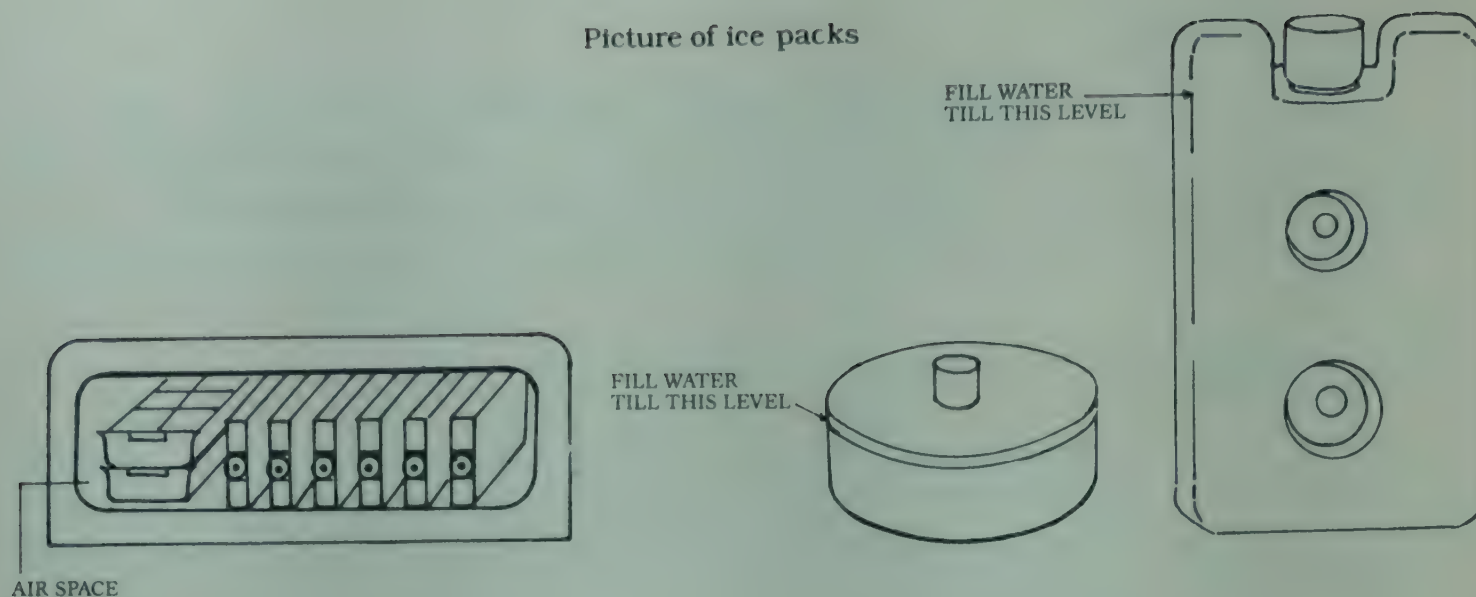
- \* Fill the ice pack with water upto the mark and put the cap on tightly (see diagram)
- \* Hold it upside down and shake it to make sure that it does not leak. If it leaks tighten the cap and shake again to see that it does not leak.
- \* Put the ice pack on its side in the freezer, 16-20 ice packs to be put initially and add same number after 24 hours.
- \* Leave the ice pack overnight to freeze solid. Do not put more than 6 ice packs for freezing at the same time in the refrigerator.
- \* The ice packs should stand with their edges and not flat on one another. This will reduce the time taken to freeze the ice pack. Salt should not be added to the water.

### **2.7 Preparing to pack your vaccine carrier**

***Before you open the refrigerator door:***

- Decide how many vials of each vaccine to pack. For this
- You need to know how many children you expect to the session.
- You need to know how many doses of vaccine each vial contains.
- Take one ampoule of diluent for each vial of measles and BCG.
- Leave vaccines and diluents in the refrigerator until the vaccine carrier is ready
- Check the vaccine carrier
- Check the insulation (for cracks).
- Check that the lid fits tightly, and that the latches work.





## 2.8 Arranging ice cubes in the thermocol box/thermos flask

- \* You must use ice cubes in plastic bags.
- \* Put a bag of ice cubes in the bottom of the carrier.
- \* Over this put the vaccines in plastic bags.
- \* Put a bag of ice cubes on top of the vaccine.

## 2.9 Packing the vaccines

### *Taking the vaccines out of the refrigerator*

- \* Estimate the number of each vaccine vials required

### MONTHLY VACCINE REQUIREMENTS (A READY RECKONER)

Sl. No.	Popula- tion	Community	Estimated Beneficiaries Monthly		MONTHLY VACCINE REQUIREMENTS					Cold Chain Equip-ment*
			Preg.	Infants	DPT (Vials)	OPV (Vials)	BCG* (Amp-oules)	Meas-les* (Vials)	T.T. (Vials)	
1	1000	Village/ward	3	3	2	1	1	1	1	DC
2	2000	-do-	7	6	3	2	1	1	2	DC
3	3000	-do-	10	9	4	3	1	2	3	VC
4	4000	-do-	14	12	5	3	1	2	3	VC
5	5000	-do-	17	15	7	4	1	2	4	VC

\*\* Equal number of diluent ampoules



## Notes

- Birth rates taken for calculating estimated beneficiaries - 36/1000 per month.
- Vaccine requirement worked out for DPT/OPV includes equal number of children (16-24 month) for booster doses.
- 1 vial/Ampoules of each vaccine/diluents, additional to meet unforeseen conditions (on demand, breakage, dropping, etc) to be taken.
- Cold chain carrier should be a vaccine carrier with fully frozen 4 icepacks - if the vaccine store session/return time is beyond 6 hours, even if the vaccine quantity can be carried in a day carrier.

\* First take the vaccines that you took to your last immunization session but which you did not use. Keep a special box in the refrigerator marked "Returned". In this box keep all the vials that were taken out. Put a rubber band if the vial was taken out once, or two bands if taken out twice. Alternatively, put one or two red dots or crosses on the label. Take only as many returned vials out of the refrigerator as you can use during the session.

Then take the vaccines that have the nearest expiry date.

- \* Then take the vaccines that have been in your refrigerator for the longest time. That is, balance vaccines from previous supplies.
- \* Look at the label of each vial of vaccine and check the expiry date.
  - If vaccine has passed the expiry date : DO NOT USE IT
  - Take it out of the refrigerator.
  - Record it as "wasted".
- \* Close the refrigerator door.

### **R E M E M B E R**

- \* *Use the returned vaccines before the others*
- \* *Use the oldest vaccines first*
- \* *Do not use date expired vaccines*

### Putting the vaccines into the carrier

- \* Check that the ice packs are fully frozen.
- \* Keep the ice packs outside for 5-10 minutes to melt the ice-spicules (frost) on outer side of ice packs. Wipe the outer side of ice-packs dry.
- \* Put the ice packs in the Vaccine Carriers
- \* Put newspaper or cardboard all around the DPT, DT and TT vaccines, between them and the ice packs.



Do not let DPT, DT and TT vaccines touch the ice, they might freeze and get damaged.

- \* Close the lid tightly.

- \* Keep the vaccines and diluent in the vaccine carrier until you are ready to use them.

## **2.10 How long can you keep vaccines in a vaccine carrier ?**

Usually, you only carry vaccines in a carrier for one working day. But the vaccines can stay below +8°C for a maximum of 48 hours if:

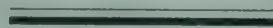
- You keep the lid on tightly,
- You leave ALL the ice packs and ice cubes inside,
- You keep the carrier in the shade.

So, if you are very careful you can keep vaccines in the carrier for one night and use them the next day.

The vaccines can be kept safely in the vaccine carrier so long as the ice packs have not fully melted.

## **2.11 How to keep the Vaccine Cold at the Immunization site.**

You must keep opened vaccine vials in a cup of ice or on an ice pack while you immunize. Therefore, carry ice cubes with you.





### 3. SYRINGES, NEEDLES AND STERILIZATION

(Demonstrate equipment and procedures)

#### 3.1 Syringes and Needles

##### *The parts of a syringe and needle*

Syringes and needles come in many different sizes and shapes, to use for different kinds of injections. But they all have the same main parts.

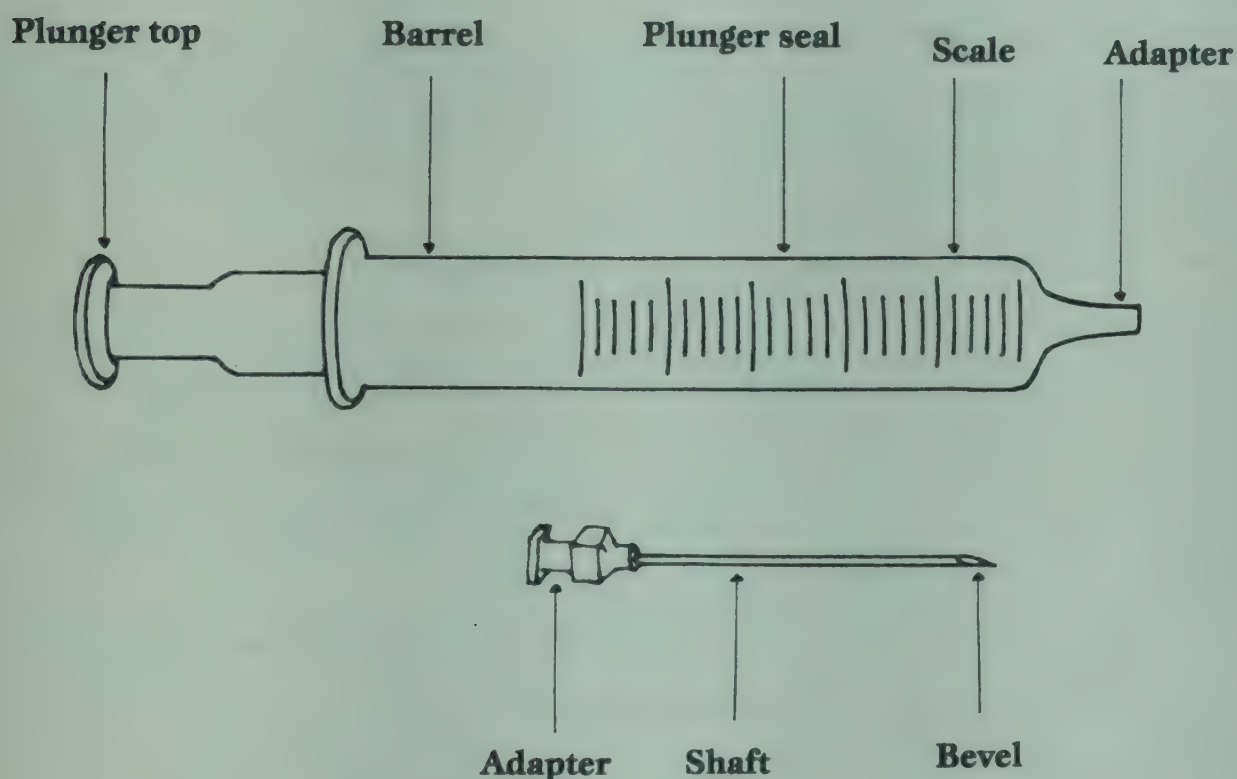


FIG. 3-1 : The parts of a syringe and needle

##### **What you need for an immunization session**

You need three sizes of syringes :

- \* 5 ml for reconstituting measles and BCG vaccines
- \* 2 ml for injections
- \* tuberculin for BCG injections.

You need three sizes of needles :

- \* mixing ..... 18 gauge
- \* intramuscular and subcutaneous..... 23 gauge
- \* intradermal..... 26 gauge



### 3.2 Sterilization

**Sterile** means with **No** micro-organisms (bacteria or viruses).

The syringes and needles that you use, and the containers and dishes that you put them into, must all be sterile.

And you must keep them sterile while you use them.

To make your immunization instruments sterile, you must autoclave or boil them for 20 minutes in water. *Do not use antiseptic solutions.*

You must use a sterilized syringe for each injection (for BCG it can be reused).

You must use a sterilized needle for each injection.

There are micro-organisms on anything that has not been sterilized. As soon as you touch a sterile instrument, or put it down on the table, or use it, micro-organisms begin to collect on it.

Then it is *unsterile* or contaminated.

Instruments quickly become contaminated when you use them, so you must handle syringes and needles carefully to keep them sterile.

Washing removes many of the bacteria - but some always remain.

Be careful what you touch - even after you have washed your hands.

Keep instruments in a sterile covered container.

You can use the same container in which you sterilized the instruments.

Use sterile forceps to pick up instruments (Fig 3.2)

Keep your forceps in their own sterilized pot. (Fig 3.3)

Do not put your hand into the container of instruments - you will contaminate them all.



Fig. 3.2

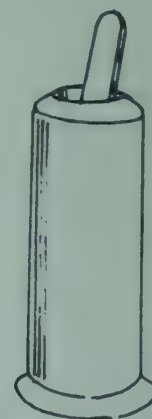


Fig. 3.3



## **R E M E M B E R**

- ★ *Sterilize enough syringes and needles before the immunization session*
- ★ *Use sterile forceps to pick up syringes and needles*
- ★ *Do not put the forceps in antiseptic solution*
- ★ *Use a separate syringe and needle for every Vaccination.*

### **HANDLING SYRINGES AND NEEDLES :**

1. Use forceps to pick up a barrel, and put it in your other hand (Fig3.4)

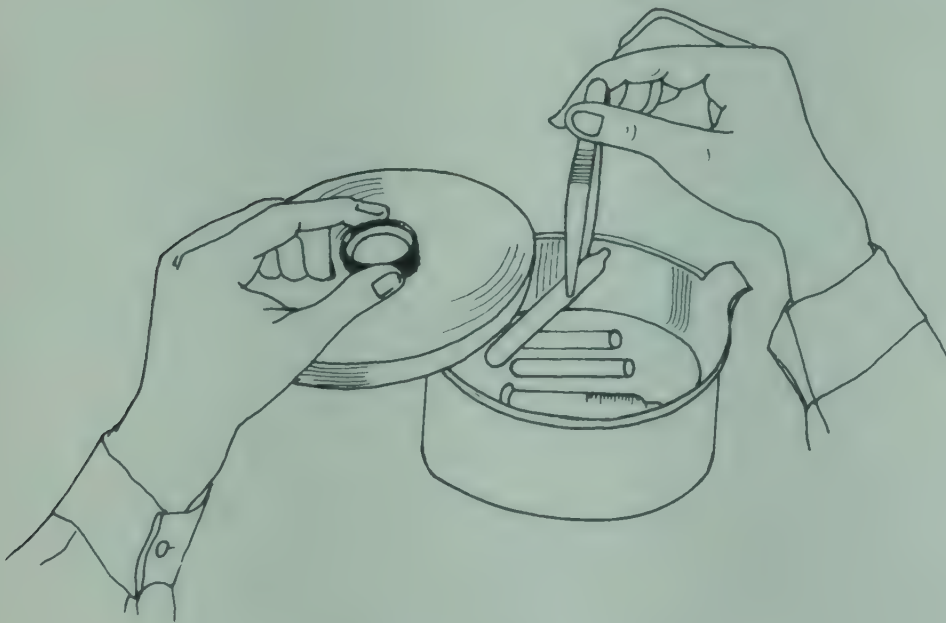


Fig. 3.4

2. Use forceps to pick up a plunger and put it in the barrel (Fig 3.5). Use forceps to pick up a needle.

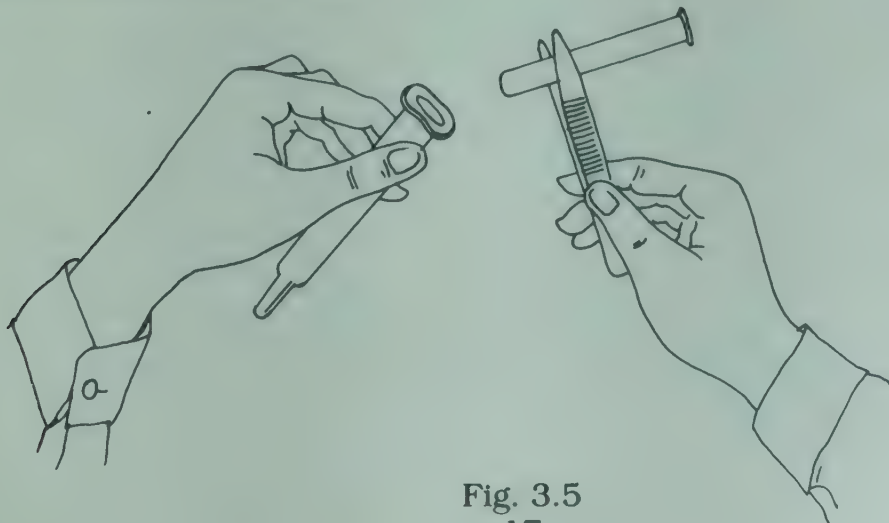


Fig. 3.5  
17



Hold the needle by its adaptor, and fit it to the adaptor of the syringe. (Fig 3.6)

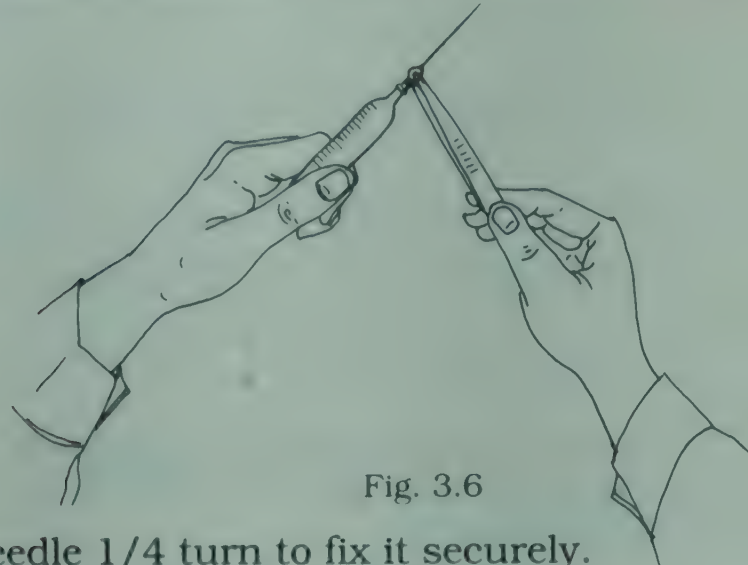


Fig. 3.6

Turn the needle 1/4 turn to fix it securely.

Be careful, adaptors of glass syringes break easily.

Now hold the syringe carefully in your hands

Be careful all the time *not to touch* :

- The adaptor of the barrel.
- The seal of the plunger.
- The shaft or bevel of the needle.

Those are the parts from which bacteria could most easily be injected into a child.

You must only touch the “safe” parts :

- The outside of the barrel.
- The top of the plunger.

*Do not touch the sterilised needle with a swab.*

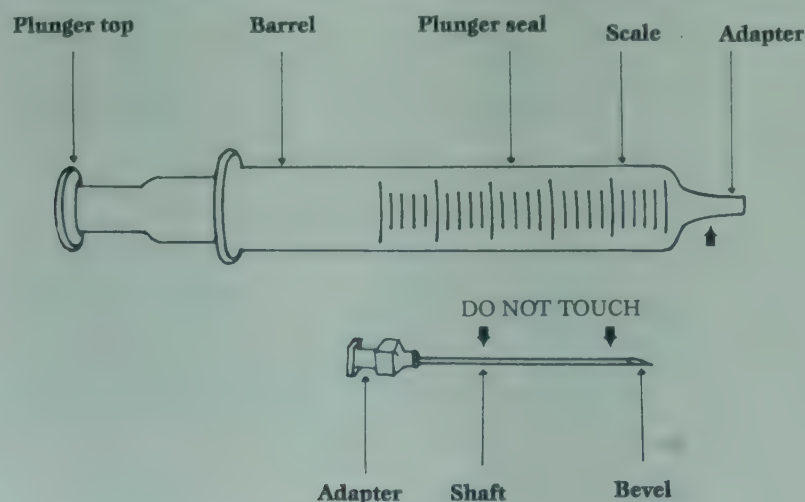


Fig. 3.7

The parts of a syringe and needle that you must not touch.



## **Handling syringes : filling and emptying them**

Continue to be careful only to touch the safe parts of the syringe.

### **WHEN YOU FILL A SYRINGE :**

- \* Support the vaccine container and the needle end of the barrel with your left hand.

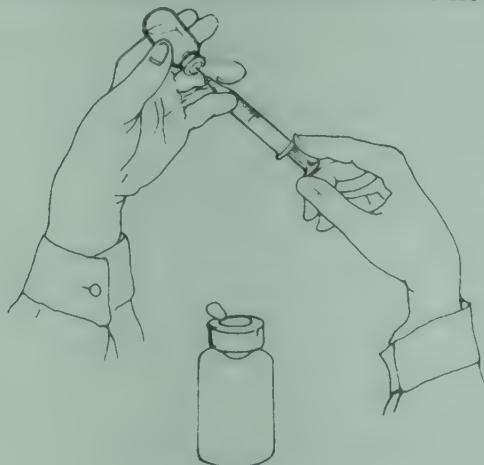


Fig. 3.8

- \* Pull the top of the plunger with the thumb and middle finger of your right hand.
- \* Push the top of the barrel finger.

### **WHEN YOU EMPTY A SYRINGE :**

- \* Hold the top of the barrel between your right index and middle fingers.

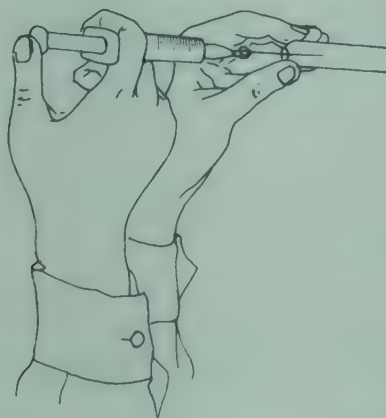


Fig. 3.9 Emptying a syringe

- \* Push the top of the plunger in with your thumb.
- \* Your left hand holds the container you are emptying the syringe into.

## **When and where do you clean and sterilize your syringes and needles ?**

You may clean and sterilize :

- \* At the Health Centre before you go to the immunization session.
- \* At the Health Centre after you come back to prepare for the next day.



Try to wash the syringes and needles at the immunization site after the session or as soon as you arrive back at the health centre.

### **R E M E M B E R**

- \* *Sterilize syringes and needles every time you use them*
- \* *Sterilize enough syringes and needles before the immunization session*
- \* *Do not open the box containing the sterilized syringes and needles before use*

### **Cleaning Syringes**

1. Put them to soak in clean water until you are ready.
2. Draw clean water into the syringe and then empty it out (as if you were injecting). Do that several times.
3. Take the plungers out of the barrels and wash each part carefully.

### **Cleaning Needles**

1. Take a clean syringe, fill it with clean water, and wash through each needle several times, as if you were injecting.

### ***Sterilizing : the equipment that you need***

There are several ways of sterilizing equipments :

- (a) autoclaving,
- (b) portable steam sterilizer and
- (c) boiling

### **(a) Autoclaving : (Electric and non-electric)**

#### **How to use the autoclave**

If you use a non-electric autoclave, place the autoclave on a stove after putting adequate water in it and then :

- Open the side holes of the dressing drum.
- Put the loaded drum in the autoclave. Make sure that the side holes are open.
- Put the lid on and tighten the screws diagonally, i.e. tighten the screws opposite one another before going on to the next pair.

- Check the pressure gauge to see whether or not it registers at zero. If it does not register at zero, note the reading.
- After sometime the needle on the pressure gauge starts moving.
- When it registers 15 lb. pressure, note the time. Let it remain at 15 lb. pressure for 15 minutes.
- If when you started, the needle on the pressure gauge did not register at zero, add 15 to the initial reading and wait till the pressure builds up to the reading you have calculated.
- At 15 lb. pressure, the temperature attained by steam is 121° Celcius. This temperature and this pressure when maintained for 15 minutes are sufficient to kill all disease-causing organisms and their spores. This will ensure complete sterilization.
- Switch off the autoclave or put off the burners.
- Let it cool.
- Remove the lid by loosening the screws on the lid.
- Remove the dressing drum and close the side holes by moving the side wall cover and lock it.
- Put a label on the drum (using adhesive plaster) which states the date of autoclaving and the name of the person who has done the autoclaving. Once open it should be used for the same session only.

#### Sample of a lable

Sterilized on : _____ By : _____ <div style="text-align: center;">Do not open</div>
---

### How to pack the instruments (for autoclaving)

#### Packing Syringes :

1. Take the plungers out of the barrels.
2. Wrap glass syringes in gauze or cotton cloth.

This is to stop them from breaking during transport. You do not need to wrap them if the session is in your Health Centre.

- Cut pieces of gauze 20 cm long from a roll.
- Use one piece of gauze for each syringe.



- Check that the barrel and plunger are a pair, and that they fit each other.
  - Wrap the gauze first round the plunger, and then round the barrel, so that there is gauze between and around each pair.
3. Pack the barrels and plungers or the gauze-wrapped glass syringes neatly into the pan for sterilization.

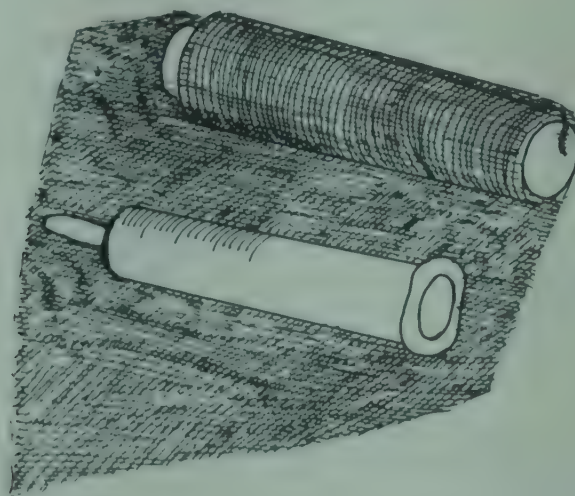


Fig. 3-10 : Wrapping barrel and plunger in gauze or cotton

### PUTTING IN THE NEEDLES

1. Put needles into their containers or stick them into a piece of gauze or cotton.
2. Leave the container of needles open, and put it on top of the syringes. Put the cover beside it.

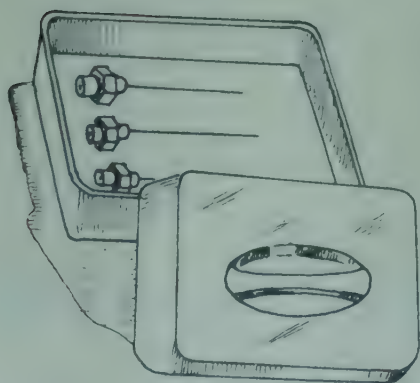


Fig. 3-11 : Needles in container

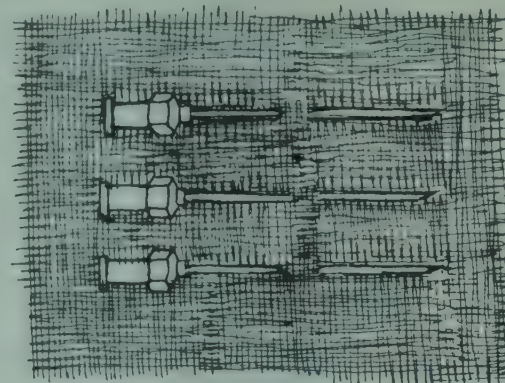


Fig. 3-12 : Needles stuck into gauze or cotton

## PUTTING IN FORCEPS

1. Put two pairs of forceps into the sterilizer.
2. Put a loop of string round each pair of forceps, to help you lift them out of the pan after sterilization.

### (a) **Portable Steam Sterilizer (Pressure Sterilizer)**

In a steam sterilizer, instruments are sterilized by steam. The steam reaches a temperature of + 121° to 126° Celcius which is much hotter than boiling water. All micro-organisms including their spores are killed if they are heated to this temperature for 20 minutes.

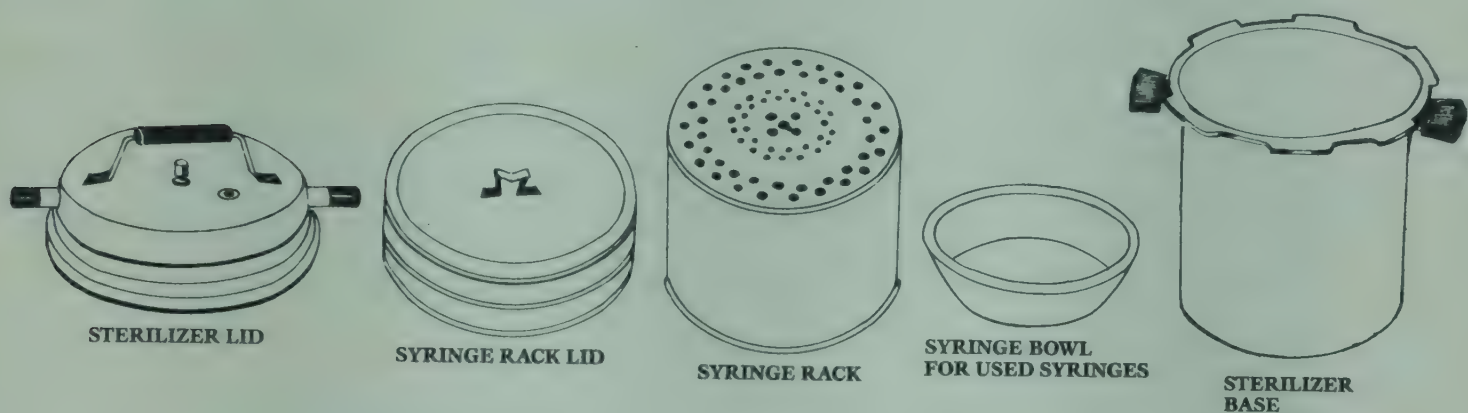


Fig. 3.13. Parts of a steam sterilizer

### (b) **How to use a Steam Sterilizer**

Take the rack out of the sterilizer base and place it on a table. Load syringes and needles that you want to sterilize. Place the larger syringes in larger holes and smallest syringes in smaller holes. Place barrel and plunger separately. Place needles for a particular sized syringe, side-by-side. This arrangement will make it easier to reassemble the syringes.

Put the rack lid on the rack and squeeze the clip on the lid so that it fits into the hole in the rack.

There is a mark inside the sterilizer base. Fill water upto this mark. If you have hard water in your area and no hard water filter is available, use boiled water.

Lift the rack by clip in the racklid and put it into the sterilizer base.

Put the pairs of forceps on the rack lid. These will be required to reassemble the syringes in an immunization session.



Put two sterilizer lid on the sterilizer base, press down on the top handles of the lid and turn it clockwise to close the sterilizer.

Check that safety valve is closed. You will see that small pin in the rubber plug is down.

Sterilizer lid has a pressure valve too. Before you start sterilizing, close the pressure valve by pushing the lever down.

Place the sterilizer on a stove. After sometime steam starts coming out of pressure valve. Count 5 minutes from this point and then reduce the flame. Keep it for another 15 minutes. Then lift the sterilizer from the stove and place it on a firm surface. Release the steam by lifting up pressure valve. It will take a long time for the syringes and needles to cool down. Therefore, try to sterilize your equipment well in advance of the session. If you have to sterilize during the session, you must allow the syringes and needles to cool down before you use them, otherwise heat will destroy the vaccine.

Open the sterilizer lid when syringes and needles are required. Turn the lid upside down. Forceps should be put on this lid and not any other surface. This will avoid contamination. Syringes are assembled using forceps.

If there is a pause in the immunization session, replace the lid.

### (c) **Boiling**

If autoclaving or pressure sterilizing is not feasible for want of equipment, only then sterilize syringes and needles by boiling. Put a clean gauze in a pan and lay syringes & needles on it. Put water, and keep the pan covered on a Stove/Chulha. Wait for at least 20 minutes after the water starts boiling.

Do not put anything more in to the saucepan after water starts to boil because :

- \* If you put a cold, glass syringe straight into boiling water it can break.
- \* You must start to count the 20 minutes all over again, or the instruments will not be properly sterilized.

Drain off all the hot water and allow the syringes and needles to cool.

**Use sterilized syringes and needles only after they have cooled.**

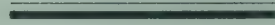
### **When using Sterile Syringes and Needles**

- Do not hold the plunger and needle with your hand. Use the forceps provided to fix plunger and needle.
- Keep the lid of the drum/container closed when not taking out the syringe.
- Use a fresh syringe and a needle for every child.

When the drum or container is opened, the unused syringes and needles left after the end of the session should be autoclaved/boiled again for use in the next session.

**R E M E M B E R**

- \* *Allow the syringes and needles to cool before use*
- \* *Put forceps on top of instruments to sterilize*
- \* *Do not add things after boiling or autoclaving*





## 4. HOW TO GIVE VACCINES

### 4.1 Checking the Vaccine

Before you use any vaccine, you must look at the label on the vial/ampoule

- to check that this is the right vaccine
- to check the dose that you should give
- to check that the vaccine has not passed its expiry date

**If the vaccine has passed its expiry date, it should not be used.**

Shake the vaccine vial before use.

Make sure that :

- the oral polio vaccine is clear; and
- there are no floccules in the DPT, DT and TT vial. If the vaccine has frozen it will not be homogenous.

#### C H E C K

- ★ *the label on the vaccine container*
- ★ *the vaccine vial for clarity*
- ★ *the dosage*
- ★ *the expiry date*

### 4.2 Vaccine containers – Ampoules

AMPOULES are very small glass containers with a thin pointed top that you break off. These are used for BCG vaccine. Since they are likely to break when frozen, do not keep them in the freezers.

**To break the top off an ampoule :**

- \* Hold the ampoule between your thumb and middle finger.
- \* Use your index finger to support the end of the ampoule neck.
- \* Take the special metal file, and scratch hard around the neck of the ampoule.

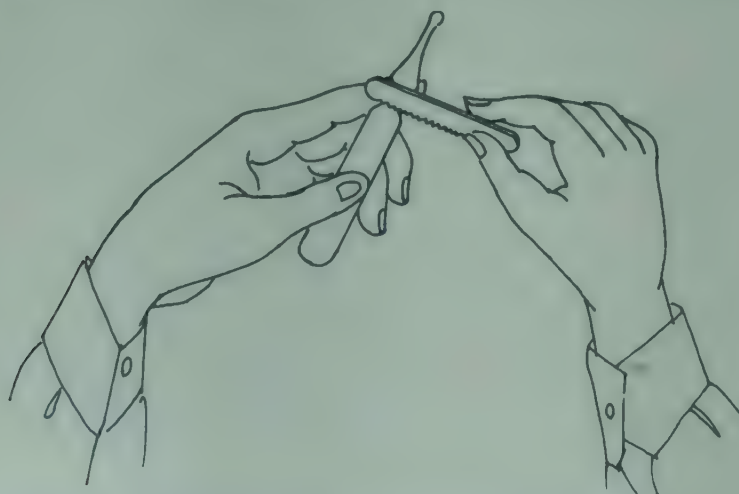


Fig. 4.1 "Scratching" the neck of an ampoule

- \* Clean the outside of the ampoule with cotton soaked in spirit or boiled water.
- This removes any glass powder that the file makes, and prevents the powder from going into the vaccine.
- \* Gently break off the top. It will break where you made the scratch.

### 4.3 Vaccine Containers - Vials

Vials are small bottles with a rubber stopper, and a metal cap to hold the stopper in place. The centre of the metal cap is cut out, so that you can easily lift it.

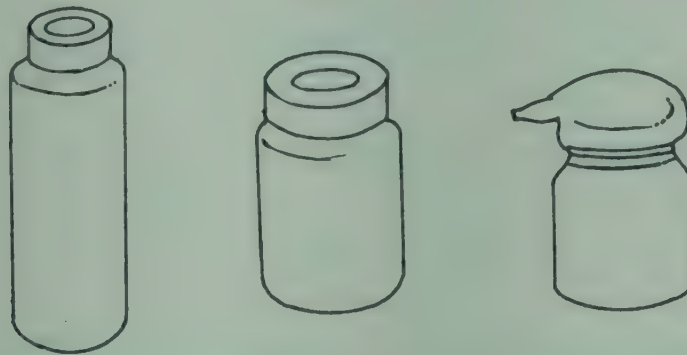


Fig. 4.2 : Vials

#### To withdraw the liquid contents of a vial :

- \* Prepare a sterile syringe and a sterile needle.
- \* Draw some air into the syringe - the same amount as the volume of liquid that you will withdraw.
- \* Push the needle through the stopper into the vial.
- \* "Inject" the air.
- \* Withdraw the liquid.
- \* The liquid will come out easily because you have injected the air to take its place.

### 4.4 Injections

You inject different vaccines in different ways. They can be :

- \* intradermal (into the top layer of the skin) - for BCG
- \* subcutaneous (just below the skin) - for measles
- \* intramuscular (deeply into the muscle) - for DPT, DT and TT.



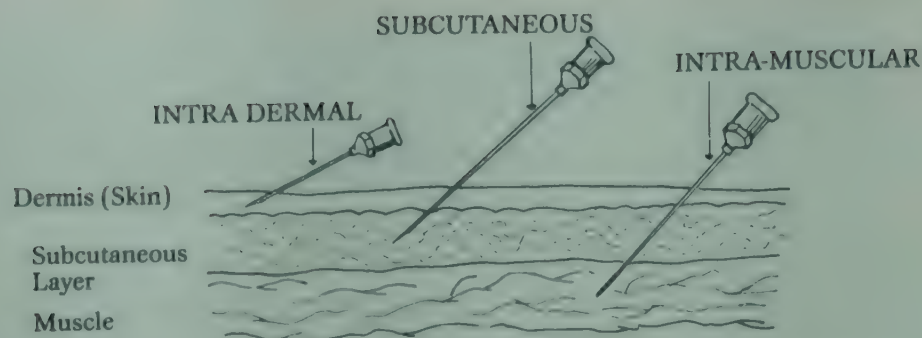


Fig. 4.3 : Diagram of different needle positions

#### Cleaning the skin before an injection

- \* Use cotton swab kept in boiled water.

#### After an injection

- \* Have a swab of dry cotton or gauze ready.
- \* Press at the site of the injection as there may be a drop of blood where the needle cut a small blood vessel.

### 4.5 DPT, DT and Tetanus Toxoid : Loading the Syringe

Before you use DPT, DT or TT vaccine you must :

1. Check the label.
2. Shake the vial, so that the sediment mixes completely into the vaccine. If the vaccine is not well mixed, it might have been frozen. Do not use such vaccine.
3. Remove the centre of the metal cap using an ampoule file.
4. Stand the vial of vaccine in a cup of ice, or on an ice pack on the table.
5. With the forceps, take a sterile 2 ml syringe.
6. With the forceps, fit a 23 gauge needle to the syringe. Use the same needle to fill the syringe and to inject the child.
7. Clean the exposed rubber cap of the vial with swab wetted with boiled water.
8. Draw 0.5 ml of vaccine into the syringe.

#### **R E M E M B E R**

##### FOR DPT VACCINE

- \* Give 0.5 ml, three times, four weeks apart
- \* Intramuscular injection into child's thigh on outside
- \* Do not use frozen vaccine

## The intramuscular injection

\* The best place to inject is the outer part of the child's mid-thigh.

If you inject into the buttocks, you may cause paralysis of the leg. For pregnant women give injection on the outer aspect of the left upper arm.

\* Put your finger and thumb on each side of the injection site.

\* Stretch the skin flat between your finger and thumb.

\* Quickly push the needle straight down through the skin between your fingers. Go deep into the muscle.

\* Withdraw the plunger a little to make sure that you are not in a vein. If you are in a vein, blood will come in the syringe. In such case, withdraw the needle, check again and inject.

\* Press the top to the plunger with your thumb to inject the vaccine.

\* Withdraw the needle.

### **R E M E M B E R**

FOR TT

★ Give 0.5 ml Twice during Pregnancy

★ Intramuscular Injection

★ Do not use frozen vaccine

## 4.6 How to give Oral Polio Vaccine (OPV)

The vaccine comes in a glass vial with a sterile dropper

- Remove the metal cap.

- Remove the rubber cap.

- Cut the plastic bag which contains the dropper.

- Fit the dropper onto the vial.

- Stand the vial with its dropper in a cup of ice.

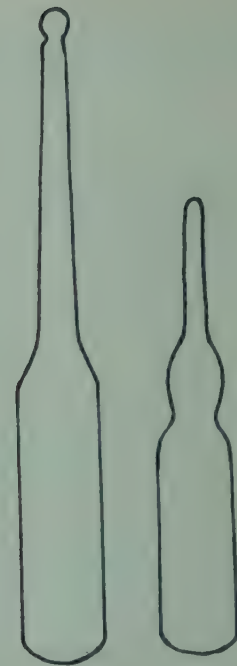
- Two drops are put directly in the mouth of the child. The dropper should not touch the mouth.

- There is no restriction to breast feeding the child before or after giving OPV.





Fig. 4.4: Measles and diluent



BCG and diluent

#### 4.7 How to prepare measles and BCG vaccines

Measles and BCG vaccines are freeze dried.

- You must reconstitute them with diluent before you can use them.
- Diluent for BCG is normal saline and for Measles it is pyrogen free double distilled water
- There is an ampoule of diluent with each vial or ampoule of vaccine.
- Always keep the diluent with the vaccine -
  - \* in the middle compartment of the refrigerator
  - \* in the cold box or vaccine carrier.
- Then you are sure that it is cold enough when you need it. But do not freeze diluent because the ampoules will break.

#### To reconstitute a freeze dried vaccine:

Wait until some children have arrived and you are ready to use the vaccine.

- \* Choose a sterile 5 ml syringe and a sterile mixing needle.

You use this large syringe and needle for mixing only - not for injecting.

- \* Open a ampoule of diluent.
- \* Draw the required quantity of the diluent into the syringe - 2ml for 20 dose ampoule of BCG and 5 ml for 10 dose vial of measles.
- \* Check the label and open the vaccine vial/ampoule.
- \* For BCG vaccine

- Tap the ampoule sharply before you open it, to make all the vaccine powder fall to the bottom (Fig 4.5)
- If you do not do this, vaccine may fall out when you break the ampoule neck.

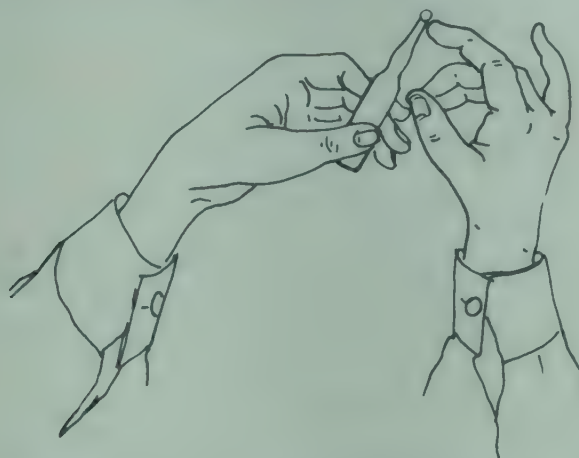


Fig. 4.5 : Tapping the ampoule

- \* Insert the mixing needle into the ampoule or vial of vaccine.
- \* Empty the diluent into the vaccine container.
- \* To mix the vaccine and diluent, do not shake it. But gently roll between palms of your hands.
- \* Then, the vaccine and diluent are well mixed, and there is no need to shake them.
- \* Keep the BCG vaccine ampoule covered with a foil or black paper.
- \* Use the reconstituted vaccine for only one session preferably within 4 hours.

#### **R E M E M B E R**

- ★ *Reconstitute vaccine at the time of session*
- ★ *Use sterile syringe and needle for each Injection*
- ★ *Discard reconstituted vaccine after session*

### **4.8 Giving BCG vaccine : Special Equipment**

To give BCG vaccine, you need to measure very small doses of vaccines and to give it Intradermally (into the skin). You need special syringes and needles to do this. Use a separate syringe, and a needle for each injection.

#### **BCG SYRINGE**

This is a narrow glass syringe. It has 2 scales. Use the scale which shows “.20,.40,.60,.80, 1.00 ml”. One *division*, or mark, is for 0.01 ml. So one (0.1



ml) dose of vaccine fills 10 divisions. Do not use the scale which shows 4, 8, 12, 16.

#### 4.9 Giving BCG vaccine : the Intradermal Injection

Reconstitute the vaccine, position the child, load the syringe.

1. Expel a drop or two of vaccine through the needle.
  - to make sure that there is no air in the needle.
  - to make sure that the needle is not blocked.
2. Hold the child's arm with your left hand so that:
  - Your hand is under the arm.
  - Your thumb and fingers come around the arm and stretch the skin.
  - BCG vaccine should be given in the left arm.
3. Hold the syringe in your right hand, *with the bevel and the scale pointing up towards you.*
4. Lay the syringe and needle almost flat along the child's arm.
5. Insert the tip of the needle into the skin - just the bevel and a little bit more.
  - Keep the needle *flat along the skin*, so that it only goes into the upper layers of the skin. Keep the bevel facing upwards.



Fig. 4.6

- *Do not push too far; and do not point downwards, or the needle will go under the skin. Then it will be subcutaneous instead of an intradermal injection.*

6 Now put your left thumb over the needle end of the syringe to hold it in position (Fig 4.7).

- Hold the plunger end of the syringe between the index and middle fingers of your right hand and press the plunger in with your right thumb.



Fig. 4.7

7. Inject 0.1 ml of vaccine, and withdraw the needle.

- Make sure that the syringe does not leak around the adaptor. If it does leak, you must fix on the needle more firmly.

#### **4.10 If you inject BCG intradermally and correctly :**

There will be a clear, flat-topped swelling in the skin. The swollen skin may look pale, with very small pits (like an orange peel).

*If you inject BCG under the skin by mistake :*

You see that the skin does not swell or that there is a round bump under the skin.

You may feel that the vaccine is going in too easily. You have to push the plunger harder for an intradermal injection.

#### **4.11 What to do:**

- \* Stop injecting and correct the position of the needle.
- \* Give the remainder of the dose, but no more.
- \* If you already have the whole dose under the skin, consider the child injected.
- \* Do not repeat the injection.
- \* Follow up the child carefully because side effects, for example abscess enlarged glands, are more likely.



## REMEMBER

### FOR BCG

- \* *Inject into the skin not under the skin*
- \* *Change syringe and needle for each injection*
- \* *Cover the ampoule and syringe with paper or foil*
- \* *Discard reconstituted vaccine after session*

#### 4.12 Giving Measles Vaccine: the Subcutaneous Injection

Reconstitute the vaccine, position the child, load the syringe.

- \* Inject into the outer part of the child's upper arm.
- \* Pinch up the skin with your fingers.
- \* Push the needle into the pinched up skin - *not straight in but sloping*.
- Do not push the needle far in.
- To control the needle, support the adaptor end of the syringe with your thumb and finger while you push the needle in.
- \* Withdraw the plunger to check for blood.
- If the needle has entered a vein, blood will come into the syringe. Withdraw the needle, check again and inject.
- \* Press the plunger with your thumb to inject the vaccine.
- \* Withdraw the needle.
- \* Use reconstituted Measles vaccine for 4 hrs only.



Fig. 4.8 Giving Measles Vaccine

## **5. STRATEGIES OF VACCINE DELIVERY**

The objective of the Universal Immunization Programme is to immunize each child with 3 doses of DPT and OPV and one dose, each of BCG and measles vaccines before the age of 12 months and to immunize all pregnant women with 2 doses of TT vaccine. The services are provided through :

- (1) fixed centres, such as PHC, Hospital and dispensary.
- (2) outreach operations such as Subcentre, Anganwadi, Village
- (3) campaigns or intensive drives.

Whatever strategy you may wish to adopt you must aim to cover all pregnant women and children under one in your area. In order to do this you must have a list of all pregnant women and infants. This list should be updated regularly. The infants should be registered as soon as they are born, although the vaccines are given when they reach the right age.

### **5.1 Fixed Centres**

1. All vaccines should be available at each centre so that the beneficiaries do not have to visit different places for different vaccines.
2. Vaccination sessions may be organized daily, bi-weekly, fortnightly, or monthly depending upon the attendance to the clinics.
3. The day and time of vaccination session should be prominently displayed.
4. All efforts should be made to hold the sessions regularly as scheduled.

### **5.2 Outreach Operations**

Vaccines may be carried and vaccination sessions organized in the sub-centre or village.

#### **5.2 1. Starting a new outreach session**

First, you must visit the community, talk to their leaders, and explain about your programme. The involvement of village health guides/trained birth attendants, anganwadi workers and other field level workers is desirable. Fix a mutually convenient day for holding the vaccination session.

Find a contact person for you. The contact person knows when you will come; they will tell the mothers and find people to help you.



Plan the site where the session will be; and the furniture that you can borrow.

Explain to your contact person exactly what you want them to do.

Go through the checklist of articles which are to be carried for the outreach session (see below);

- Sufficient number of sterilized syringes and needles
- Sufficient quantity of vaccines and diluent in a vaccine carrier
- Ampoule file
- Sufficient quantity of ice
- Container for used syringes/needles
- One cup
- Forceps
- Cotton
- Saucepan with lid
- Soap
- Pen
- Stove
- Match box
- Immunization cards
- Immunization register

### **5.2.2 Arriving at a village for an immunization session**

#### ***What do you do first?***

- \* Put the vaccine carrier in the shade.
- \* Inform your contact person that you have come.
- \* The contact person prepares the site and the people before the team arrives. Check if all those who were expected to come, have arrived and if not, send the contact person to call them.
- \* One member of the immunization team starts health education. He informs the community about the diseases and their prevention, when to come for the subsequent doses, probable reactions and when to seek help from a doctor.
- \* The other team members prepare the immunization site with help of people from the community.

#### **Follow-up visits**

- \* Arrange for repeat visits. The interval between the visits should be minimum 4 weeks.

- \* All efforts must be made to hold the sessions on the fixed days. If this is not possible for some reason, the villagers must be informed in time and the date for the next session fixed.
- \* Contact all the immunized children during the routine visits to find out if there are any adverse reactions and to minimise drop outs.

### **5.2.3 When you are back at the health centre**

- Check again that there is ice in the vaccine carrier to ensure that :
- \* The vaccines are in good condition.
- \* Mark the vials or ampoules of those vaccines and put them into the "Returned" box in the refrigerator. Use them first next time.
- \* Take care that the vaccines are not taken in and out of the refrigerator more than three times. Put rubber band(s) to indicate the number of times the vials were taken out of the refrigerator.
- \* Check that there are enough ice packs and ice cubes in the freezer for your next session.
- \* If you already put the spare ice packs into the freezer before your went out, put the "return" ice packs onto the lower shelf of the main compartment.
- \* Clean Vaccine Carrier and leave it open for sometime to dry. Check that there are no cracks.
- \* If you were not able to clean your syringes, needles, containers, forceps, etc. at the site, do it now.

### **5.3 Campaigns/Intensive Drives**

Campaigns are normally organized in areas which cannot be covered either through the fixed centres or by outreach operations. Teams of health workers move from village to village carrying adequate quantities of the vaccines and other supplies.

As for the outreach operations prior ground work must be done to make the drive a success. Since a large number of villages are expected to be covered within a short period of time and the distance to be covered from the health centres are also greater, village-wise time schedule and the mode of transportation must be clearly chalked out in advance.

Active community participation would greatly facilitate the work. The village leaders, elders, teachers and others should be encouraged to keep the list of eligible children ready and collect them at vaccination site on the prefixed day and time. Arrangement for repeat visits must be made to complete the vaccination course.



## 6. COMMUNITY SUPPORT AND DEMAND GENERATION

### 6.1 Motivating the Community

*The need for co-operation*

- \* For your immunization programme to succeed, you need people to co-operate. It also makes your own work easy, interesting and pleasant.
- \* Busy mothers must take time and make the effort to come to your immunization session. They may have to walk a long way, or pay for transport. They have to remember when to come again.
- \* You need people to co-operate if you are to arrange an outreach session. You need help from the community to find an immunization site, and to borrow furniture. And you may need help during the session itself - for example, to register and to weigh children. You need help to encourage and remind mothers to attend.
- \* People will co-operate to make the programme succeed if they **want** the immunizations. They will not co-operate very well if they only accept immunizations because you want them to. They need to feel that their children's health is **their** responsibility. You are there to help them to have something that they want and value.
- \* So, first you have to make the community want the immunization programme. That is, you must motivate or move the people.

### 6.2 How Can You Make People In a Community Want Immunization Programme?

#### 6.2. Identify Influencers

Influencer is a person who by virtue of his position or services rendered by him is popular and can motivate the community for accepting immunization. In every village influencers must be identified for each community and groups within the community. In a mixed group only a few may dominate and monopolise the discussion. Therefore, such mixed groups have a disadvantage. The identification of influencer may be done by the health worker judiciously. The worker should prepare a time schedule for meeting them either individually or in groups. The worker should maintain a village-wise list of influencers in the area as given in the proforma:

S.No.	Name of Influencer	Occupation/position/ status	Group reached
1.			
2.			
3.			
4.			

Commonly available influencers/people who can help are :-

- Political leaders
- Community leaders
- Religious leaders
- Governmental staff  
(allied departments)
- Extension workers e.g.  
(agriculture)
- School teachers
- Women's groups
- Youth organizations
- NSS Volunteers
- Traditional healers
- Village health guides
- Traditional birth attendants
- Anganwadi workers
- Youth Organizations

### **6.2.2 Identify Communication sites (Commsites):**

Communication site is a place where people gather for work or at leisure. These are easily identified by the village people. You can display educational and motivational materials at these sites, hold meetings with the community groups, exhibit audio-visual aids to disseminate the message on immunization. A chaupal, bus stand, well, panchayat ghar, flour mill, adult literacy centre, milk co-operative, etc. can be commsites. The health worker should maintain a list of these sites village-wise as per proforma (Annexure-1)

### **6.2.3 Meeting with the Community :**

No amount of services can ensure acceptance of immunization services. The community should be informed and motivated enough to come for



immunization till the completion of the full course. Meeting with the community to have its full support, should be held at a place and time convenient to the community. Advance information must be given regarding this. Explain to them:

- Dangers of the target diseases, magnitude of the problem locally.
- Easy prevention by vaccines
- Immunization programme and service you are offering including time and place.
- Take the help of influencers to motivate people.

Ask for their help if there is any opposition or other problems in providing the services.

Ask for their help to explain the programme to the community.

Consult them before fixing the date and time. Remember if the date or time is not convenient, few will attend. However, you must be practical also. Consult your supervisor if the day or time is not convenient. You must get your vaccines in time since you cannot store them at the sub-centre.

Ask them to encourage people to come to the session.

#### **6.2.4 Make Community's Experience of Immunization a Good one**

People's experience of your sessions will have a big effect on their motivation.

Be reliable, punctual, polite and friendly.

Look after your vaccines carefully so that as a result of your work there will be no disease in the vaccinated children. This will motivate the others to bring their children to you.

Give the community some feedback. Tell people the results of your work; how many children you have immunized, how many not immunized and what they can do to immunize them.

### **6.3 Community Participation**

The reasons for the poor participation by the community can broadly be classified into three categories:

#### **6.3.1 Lack of Information**

- a. about the severity of the diseases or the complications they can cause;
- b. that these diseases can be prevented;

- c. that the services are available in their areas;
- d. time and place of vaccination sessions;
- e. age at which vaccinations are required and the need for completing the full course.

### **6.3.2 Lack of motivation**

- a. no faith in vaccination services;
- b. belief in traditional methods;
- c. rumour about ineffectiveness or harm;
- d. poor services and or discourteous behaviour of staff;
- e. fear of side reactions.

### **6.3.3 Obstacles**

- a. vaccination centre too far;
- b. time not convenient;
- c. inconvenient or expensive to travel to the centre.

Since the reasons may differ from place to place these must be looked into if there is a poor response from the public. It has generally been founded that this is either due to lack of information or the time and place not being convenient. Courteous and efficient services will encourage community participation. The programme should be monitored to see that there are no reactions due to improper sterilisation of syringes and needles or wrong technique of administration of vaccines.

The health education sessions should be conducted in a language and content easily understood by the local people. The person conducting the health talks should be experienced, knowledgeable and motivated. For passing on simple messages, however, all members of the health team., including dais, anganwadi workers, and community health volunteers should be used.

Posters on the diseases and immunization schedules should be placed at strategic points. Teaching and publicity aids provided, should be used.

## **6.4 Discuss the problems encountered with the medical officers,. Be free to ask questions, if there is any doubt.**

You can assess your success in motivating the community by coverage of pregnant women and infants with the full course of the vaccines.



High drop-out rates are indications of problems in your area. Look into it urgently. Take necessary measures in consultation with the medical officer.

You have been very successful in getting good community response to your programme if all the children get 3 doses of DPT and Polio vaccine and one dose of Measles and BCG vaccine by first birth day and all pregnant women get two doses or booster of tetanus toxoid.

### **R E M E M B E R**

- ★ *Remind mothers about next visit for immunization.*
- ★ *Hold sessions on planned day and time.*
- ★ *Be polite and courteous.*
- ★ *Don't use unsterilized/blunt needles.*
- ★ *Don't use opened vials in subsequent sessions.*
- ★ *Mild illnesses are not contraindications - vaccinate.*
- ★ *Report any case in a vaccinated child.*
- ★ *Report abscesses following immunization.*

## 7. DISEASE SURVEILLANCE

The ultimate objective of the immunization programme is to reduce the incidence of vaccine preventable diseases namely diphtheria, pertussis, whooping cough, tetanus, poliomyelitis, childhood tuberculosis and measles. Surveillance of diseases is an important component of the immunization programme. The programme can be planned more effectively if there is a regular and reliable flow of information on those who are becoming sick. The information is essential for monitoring so that deficiencies could be pinpointed and necessary corrective action taken in time. The impact of immunization on disease incidence can be documented only if there is an efficient surveillance system. Every health worker should look for in the villages and report the vaccine preventable diseases to the health centre. This will help to know the number of cases occurring in the area, but also the age at which they occur, severity of the disease and the vaccination status.

It is necessary that you should know which are the diseases that can be controlled by immunization, recognise them when the cases occur in your areas and also be capable of giving the required information to the public.

Uniformity in reporting is essential for comparing the data collected and its interpretation. For this Standard Case Definitions are used. Accordingly cases are classified as :

- Suspect : diagnosis made on clinical grounds by the health workers
- Probable : diagnosis made on clinical grounds by a medical officer and/or positive laboratory identification of the disease.

As a health worker you will be identifying suspect cases and referring these to Medical Officer for confirmation. Standard case definitions giving features to classify the cases of target diseases as 'suspect' are given below:

### 7.1.1 Neonatal Tetanus

- History of normal suckling or cry for the first 2 days of life; and
- History of onset of illness between 3 and 28 days of age;
- History of inability to suckle followed by stiffness and/or "convulsions" and
- Death,



### **7.1.2 Tetanus in Older Children and Adults**

History of injury or ear infection followed by difficulty in opening mouth (or jerking or mouth) or stiffness of the neck or body.

### **7.2 Poliomyelitis**

- history of fever;
- history of abrupt onset of weakness or paralysis of leg(s), and /or arm(s) and or trunk;
- history of no progression of paralysis after the first 3 days and
- history that paralysis was not present at birth or associated with serious injury or mental retardation.

### **7.3 Measles**

- history of fever and rash and anyone of the following:
  - \* cough
  - \* running nose
  - \* red eyes.

### **7.4 Whooping Cough (Pertussis)**

- history or observation of repeated severe cough and
- history or observation of any one of the following:
  - \* cough persisting for 2 or more weeks;
  - \* fits of coughing;
  - \* cough followed by vomiting;
  - \* typical whoop in older infants and children;
  - \* before onset of cough, child feels apprehensive and holds some object.
  - \* child appears normal in between the bouts.

### **7.5 Diphtheria**

- sore throat (with or without difficulty in swallowing);
- mild fever;
- greyish-white membrane (with or without difficulty in breathing)

## **7.6 Tuberculosis in Children Under 5 years of Age**

- An ill child with a history of contact with suspect or confirmed case of pulmonary tuberculosis:
  - And Child:
    - \* with fever more than four weeks not responding to routine therapy.
    - \* with loss of weight, cough and wheeze, and who does not respond to; antibiotics therapy for acute respiratory diseases:
    - \* with painless firm or soft swelling in a group of superficial lymph nodes;
    - \* with any bone or joint lesion of slow onset;
    - \* with signs suggesting meningitis or disease in central nervous system.
    - \* with abdominal swelling, hard painless mass and free fluid;
    - \* who does not return to normal health after measles or Whooping cough;
    - \* formation of nodule/ulcer within 48-72 hrs after routine BCG vaccination.
-



## **8. MONITORING THE IMMUNIZATION PROGRAMME**

### **8.1 Records and Reports**

Minimum records: The minimum records required to be kept in the immunization programme are :

- a) list of eligibles (infants and pregnant women) (refer annexure 1 & 2)
- b) records of vaccination by age and dose.
- c) record of cases and deaths.

Those working at the P.H.C. or higher level in addition have to look after

- d) records of vaccines received and utilized during the month.
- e) refrigerator temperature record.

### **8.2 Vaccination Performance**

The record of the vaccinations done during the day should be kept in a register at the centre. This should include the name of the child, his address, age, type of vaccine given and the number of dose.

The batch number(s) and the expiry dates of the vaccine vials used during the day should be noted.

The register should preferably be village, mohallas or wardwise, with a few pages assigned to each unit. The same register can be used for several villages/units under your purview.

For the "out of the area" beneficiaries keep a few pages separately earmarked.

The total number of vaccinations performed dose-wise should be compiled for each vaccine and forwarded to the next higher level within the prescribed time period. If reports are received late from one or more units, follow up action should be taken to ensure that all these units send their reports in time.

Entries of vaccinations should also be made in the immunization card which should be handed over to the guardian of the child. The immunization card should be clearly written and should give the identity of the child (name, parent, date of birth, address) and a record of the immunization.

The counterfoils of immunization cards must be kept village-wise in the bag provided, and take the cards of village concerned on the day of Immunization session. (Refer Annexure 3)

### **8.3 Cases of Deaths**

A record of the cases and deaths due to diseases preventable by immunization should be available at the centre. This will normally include only cases which have reported for treatment.

Neonatal tetanus and tetanus in others should be reported separately. Poliomyelitis should include only cases who developed the symptoms during the year of the report and should not include cases of residual polio paralysis.

In areas where the vaccination coverage is high and consequently the number of cases few, attempt should be made to search out any cases in the area actively.

The consolidated list of the cases and deaths for the month should be forwarded to the next higher level as per annexure 4 & 5.

### **8.4 Vaccine Stocks**

The number of vials received vaccine-wise with batch numbers and dates of expiry must be recorded in the register. The actual quantities of the vaccines used should be reconciled with the utilization reports (total number of vaccinations reported + 10%). The stock in hand at the beginning of the month, quantity of vaccine received, amount utilized and the balance on the month, quantity of vaccine received, amount utilized and the balance on the first of the next month must be included with all indents for more vaccine.

### **8.5 Refrigerator Temperature Record**

The temperature in the refrigerator should be recorded twice daily. the record should be available for inspection by the supervisors. This form need not be forwarded to the district or the state.

The objective of the programme will not be achieved if certain tasks that should be done are either not being done correctly or not being done at all. It is necessary to observe frequently the ongoing work. Some of the points that need to be monitored are given in the enclosed check list.



**LIST OF COMMUNICATION SITES**

Village ..... Sub-centre ..... PHC .....

S. NO.	Location of Commsites	Village group reached	Display	Useful for			
				Small meetings	Large gathering	Announce- ments	Remarks
1.							
2.							
3.							
4.							
5.							
6.							
7.							

**NATIONAL IMMUNIZATION PROGRAMME  
MONTHLY REPORT**

FOR \_\_\_\_\_ Month) \_\_\_\_\_ (Year) Unit Code Number \_\_\_\_\_

1. Report for PHC/Urban Unit (Name) \_\_\_\_\_ 2. State \_\_\_\_\_
3. Number of Eligible infants enlisted during month \_\_\_\_\_ Distt. Code No. \_\_\_\_\_
4. Number of Eligible Pregnant women enlisted during month \_\_\_\_\_ 

--	--	--	--	--
5. Total No. of reporting units \_\_\_\_\_ Urban \_\_\_\_\_ Rual \_\_\_\_\_
6. Total No. of units which have sent reports \_\_\_\_\_ Urban \_\_\_\_\_ Rural \_\_\_\_\_

**A. SURVEILLANCE**

Disease	Number Reported			
	For the month		Cummulative since April	
	Cases	Deaths	Cases	Deaths
Diphtheria				
Pertussis				
Neonatal Tetanus				
Tetanus (others)				
Poliomyelitis (acute)				
Tuberculosis (childhood)				
Measles				

**B. VACCINATION PERFORMANCE (Number of beneficiaries) Total since April**

	Vaccine	Dose	During the month of		Total since April	
	TT	First				
Pregnant women		Second				
		Booster				
For children between 6 weeks to 12 months 16-24 months	DPT		Below 1-year	Above 1-year	Below 1-year	Above 1-year
		First				
		Second				
		Third				
		Booster				
For children upto 12 months 16-24 months	POLIO DROPS	Zero				
		Second				
		Third				
		Booster				
For children between 6 week to 12 months	BCG					
For children between 9-12 months	MEASLES					
Number of children who completed the full schedule of DPT, Polio, BCG and Measles						
For 5 year old children	DT	First				
		Second				
		Booster				
For 10 year old children	TT	First				
		Second				
For 16 year old Children	TT	First				
		Second				



Number of Doses at Dist. level store  
DO NOT INCLUDE THE STOCK ALREADY ISSUED TO  
SUB-CENTRE OR VOLUNTARY ORGANISATION

**C. VACINE SUPPLY**

Medicine	Stock in hand (begining of month	Received during the month	Issued to PHCs etc during the month	Balance in stock (end of month
DPT				
POLIO				
BCG				
Measies				
TT				
DT				
Syringes 2 ml				
Syringes 1 ml				
Needles 23 G				
Needles 26 G				
Immun. cards				

**D. COLDCHAIN**

	Total No. available	Total Not Working	In working Order
<b>DEEP FREEZERS</b> District Headquarters			
Primary Health-Centres			
<b>ILRS (NO.)</b> District Headquarters			
Primary Health-Centres			
<b>COLD BOXES</b> District Headquarters			
Primary Health-Centres			
<b>VACCINE CARRIERS</b> District Headquarters			
Primary Health Centres			

## E. UNTOWARD REACTIONS

Reported deaths associated with vaccination during the month

A. Abscesses

B. Others Complications

District Immunization Officer

DATE :

TO

1. Monitoring and Evaluation Unit.  
Universal Immunization Programme Division  
Ministry of Health and Family Welfare,  
Nirman Bhawan, New Delhi - 110 011.
2. State EPI Officer.

COMM 321

C1934  
COMMUNITY HEALTH CELL  
326, V Main, I Block  
Koramangala  
Bangalore-560034  
India



# MOTHER-INFANT IMMUNIZATION CARD

**II DURING THE SECOND YEAR (12-24 MONTHS)**

DATE  
Vitamin A

DATE  
DPT

DATE  
OPV

- This part of the card should remain with the health worker.

Health worker's signature

**III DURING THE SECOND YEAR (12-24 MONTHS)**

DATE

Vitamin A

DATE

DPT

DATE

OPV

DATE

Vitamin A

DATE

Vitamin A

DPT

## MOTHER-INFANT IMMUNIZATION CARD



Serial number

## THE IDEAL IMMUNIZATION SCHEDULE

FOR THE PREGNANT WOMAN:	
Early in pregnancy	T.T.—1 (injection)
One month after T.T.—1	T.T.—2 or T.T. booster (injection)

FOR THE INFANTS:	
At 1½ months	B.C.G. (injection),* D.P.T.—1 (injection) and O.P.V.—1 (dose)
At 2½ months	D.P.T.—2 (injection) and O.P.V.—2 (dose)
At 3½ months	D.P.T.—3 (injection) and O.P.V.—3 (dose)
At 9 months	Measles (injection)
At 16 to 24 months	D.P.T. Booster (injection) and O.P.V. Booster (dose)

☐ Even if you are late for an injection/dose, you must still get it. Consult your health worker regarding this.

☐ Please keep this card carefully.

☐ Whenever you come to the health centre, bring this card with you.

☐ After every injection/dose, get the date of receiving it recorded in this card.

If the infant has been delivered in a hospital/clinic, she should be given the B.C.G. injection at birth.

This part of the card should remain with the pregnant woman/infant's mother.

[illegible]

**NATIONAL IMMUNIZATION MISSION**  
Government of India

## RECORD OF A.N.C. AND IMMUNIZATION DURING PREGNANCY

DATE ANC-1	DATE ANC-2	DATE ANC-3
DATE IRON	DATE IRON	DATE IRON
DATE TT-1	DATE TT-2 (Booster)	

- ☐ The pregnant woman should regularly meet the health worker to get ante-natal check-ups (A.N.C.) done
- ☐ Remember, it is important to get 2 T.T. injections or 1 T.T. booster injection, and to take 100 iron tablets in 3 months, during pregnancy.
- ☐ Remember that T.T.-2 (Booster) should be given at least 1 month before the expected date of delivery



NATIONAL IMMUNIZATION MISSION  
Government of India

## INFANT IMMUNIZATION RECORD I. DURING THE FIRST YEAR (0-12 MONTHS)

DATE BCG	DATE DPT-1	DATE DPT-2	DATE DPT-3
DATE OPV-1	DATE OPV-2	DATE OPV-3	DATE Measles

- ☐ Get all the injections/doses at the scheduled time and get them recorded here
- ☐ Remember, there must be a gap of one month between every injection/dose of DPT/OPV.



Health worker's signature



NATIONAL IMMUNIZATION MISSION  
Government of India

## RECORD OF A.N.C. AND IMMUNIZATION DURING PREGNANCY

DATE ANC-1	DATE ANC-2	DATE ANC-3
DATE IRON	DATE IRON	DATE IRON
DATE TT-1	DATE TT-2 (Booster)	

## INFANT IMMUNIZATION RECORD I. DURING THE FIRST YEAR (0-12 MONTHS)

DATE BCG	DATE DPT-1	DATE DPT-2	DATE DPT-3
DATE OPV-1	DATE OPV-2	DATE OPV-3	DATE Measles



NATIONAL IMMUNIZATION MISSION  
Government of India



VILLAGE/WARD \_\_\_\_\_

YEAR\_

[illegible]

\* Result is to be recorded as :

L.B = Live Birth  
S.B = Still Birth  
A = Abortion

**Note:** All live births should be taken to infants register and indicate page no. and serial no.

# INFANTS IMMUNIZATION RECORD

VILLAGE/WARD \_\_\_\_\_

YEAR\_\_\_\_\_

[illegible]



## NOTES



Please fill this form and send to: Post Box 3019  
Lodhi Estate, New Delhi-110 003

My Name is \_\_\_\_\_

I work at \_\_\_\_\_

as \_\_\_\_\_

I received the Health Workers Manual on \_\_\_\_\_

This manual is \_\_\_\_\_

\_\_\_\_\_

Please send me more information on immunization.

My address is \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



